

Work Order ID 148090

Friday, June 24, 2016 9:50:25 AM

148090

Page 1

Item ID: D5162-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Seat Structure Assembly
Start Date: 7/15/2016 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 7/22/2016 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: Dem Date: 16/06/24 Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3016	(DEO) A1								
D3017	C								
D5162	A								
D5189	A								

105 Pick Kit 0.00

105

Packaging Memo 0.05

Packaging

1 Q 16-11-2

110 Weld per dwg A/R 4130 rod Batch: M127725 0.00

110

Large Fab Memo 0.17

Large Fab

FABRICATE D5189-041 AS PER DWG AND BY USING DT8622.

DO NOT OPEN HOLES TO SIZE, IT WILL BE OPEN UPON FINAL ASSEMBLY.

ONLY WELD STUD D4667-041 TO TUBE. END CAP WILL BE WELDED AFTER OPENING HOLES IN TUBE.

1 Q 16-11-2

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							

Friday, June 24, 2016 9:50:25 AM

Item ID: D5162-041

Accept

N900040100

Setup Start

NS1

Revision ID:

Item Name: Seat Structure Assembly

Stop

NS2

Start Date: 7/15/2016 **Start Qty:** 1.00

1

Cust Item ID:

Required Date: 7/22/2016 **Req'd Qty:** 1.00

1

Customer:

Reference:

Approvals: _____ **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start

NR1

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

NR2

Sequence ID/
Work Center ID

Operation Description

Set Up/ Run Hours

Tool ID**Tool #****Plan
Code**

**Accept
Qty**

Reject
QtyReject
Number

**Insp.
Stamp**

120

Weld per dwg A/R 4130 rod Batch: M127925 0.00

0.00

120

0.17

Large Fab

Memo

FABRICATE (2) D3016-041 AS PER DWG.

WELD ASSEMBLY USING DT8597 WELD JIG.

DO NOT DRILL HOLES AS THEY WILL BE TRANSFER DRILL AT FUTHER STEP.

DO NOT WELD GUSSETS AND BRACKET THEY WILL BE WELDED AT A FUTHER STEP.

1 EL 16-11-2

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
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Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER :			
Misidentified ☐	Past Due ☐																																																																

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Item ID: D5162-041 Accept ***N900040100*** Setup Start ***NS1***
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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Weld per dwg A/R 4130 rod Batch: <u>M127925</u>	0.00							
130						<u>1</u>	<u>2</u>	<u>16-11-2</u>	
Large Fab	Memo	0.17							
Large Fab	FABRICATE D3017-041 AS PER DWG:								
	USE DT8598 FOR BENDING D3017-1/-3 TUBE.								
	USE DT8621 FOR DRILLING (#30 DRILL) BACK FRAME. ***DO NOT OPEN HOLES IT WILL BE DONE AT FUTHER STEP***								
	USE DT8622 FOR DRILLING (#30 DRILL) D3017-5. ***DO NOT OPEN HOLES IT WILL BE DONE AT FUTHER STEP***								
	USE DT8598 JIG FOR WELDING TUBES, LUGS AND ONE END CAP, OTHER END CAP WILL BE WELDED AFTER OPENING HOLES.								
140	QC5- Inspect part completeness to step on W/O	0.00							
140									
QC	Memo	0.00							
Quality Control									

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DAS
9
9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
				Completed By 					
				Lead hand / Supervisor Approval Verification 					
				QC / QA Coordinator Approval 					

Root Cause				FAULT CATEGORY			
Environment ☐	Design ☐	Doc/Data ☐	Equip/Tooling ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Handling/Pre ☐	Material ☐	Internal Transport ☐	Tribal Knowledge ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
LOA ☐	Substation ☐	Past Expiry Date ☐	Misidentified ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
				Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
				Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
				Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
				Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
				Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
				Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
				Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
				OTHER : ☐			

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Required Date: 7/22/2016 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150		0.00							
150						<u>1</u>	<u>02</u>	<u>16-11-2</u>	
Large Fab	Memo	0.17							
Large Fab	1- BOLT SEAT FRAME TO ASSEMBLY PLATE DT8624.								
	2- TRANSFER DRILL D5189-041 TO D3016-041 AS PER DWG USING #30 DRILL AND CLECO THEN DRILL TO FINISH SIZE.								
	3- TRANSFER DRILL SEAT PAN TO D5189-041 AND 3016-041.								
	4- TRASFER DRILL SEAT AND D3016-041 TO D3017-041 USING DT <u>✓</u> AND USING TOOL TO ACHIEVE DESIRED ANGLE ON BACK REST.								
155	Weld per dwg A/R 4130 rod Batch: <u>M127925</u>	0.00							
155						<u>1</u>	<u>02</u>	<u>16-11-2</u>	
Large Fab	Memo	0.17							
Large Fab	ARMREST:								
	1- ASSEMBLE AND TRANSFER DRILL D5189-043 TO D3017-041. OPEN HOLES TO FINISH SIZE AS PER DWG								
	STRUT:								
	1-								
	SEAT BRACE:								
	1- USE DT10132 AND DT10133 TO TRANSFER DRILL HOLES IN SEAT PAN AND SEAT BRACE.								

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

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1 480.90

Page 5

Stop *NR2*

NOV 02 2016 DAS
9
9-89

0.00

1 Q 16-11-2

9 NOV 02 2016 DAS
9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
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Misidentified ☐	Past Due ☐																																																																

Work Order ID 148090

Friday, June 24, 2016 9:50:25 AM

148090

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Item ID: D5162-041**Accept*****N900040100*****Setup Start*****NS1*****Revision ID:****Stop*****NS2*****Item Name:** Seat Structure Assembly**Start Date:** 7/15/2016 **Start Qty:** 1.00***1*****Cust Item ID:****Required Date:** 7/22/2016 **Req'd Qty:** 1.00***1*****Customer:****Reference:****Approvals:** **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____**Run Start*****NR1*****QC:** _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____**Stop*****NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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175

QC5- Inspect part completeness to step on W/O

0.00

175

QC

Memo

0.00

Quality Control

NOV 02 2016
DAS
9
9-89

180

Chemical Conversion Coat per QSI005 4.1

0.00

180

HandFinish

Memo

0.03

Hand Finishing

CHEMICAL CONVERSION SEAT PANEL D3022-1 AND BACK PANEL
D3023-1 AS PER DWG

2016/11/02
BEB

190

QC7-Inspect Chemical Conversion Coat

0.00

190

QC

Memo

0.00

Quality Control

NOV 03 2016
DAS
38
9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
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Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
240 30 10-6				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

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Item ID: D5162-041

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Seat Structure Assembly

Start Date: 7/15/2016 Start Qty: 1.00

1

Cust Item ID:

Required Date: 7/22/2016 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

230

QC3- Inspect Part Finish

0.00

230

QC

Memo

0.00

Quality Control

1X

DAS
36
9-89
16/11/07

240

0.00

240

Small Fab

Memo

0.17

Small Fab

ASSEMBLE AS PER DWG

1X

DAS
36
9-89
16/11/07

250

QC5- Inspect part completeness to step on W/O

0.00

250

QC

Memo

0.00

Quality Control

DAS
30
9-89

1

NOV 07 2016

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____					

Work Order ID 148090

Friday, June 24, 2016 9:50:25 AM

148090

Page 9

Item ID: D5162-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Seat Structure Assembly
Start Date: 7/15/2016 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 7/22/2016 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
260	Identify as per dwg & Stock Location: <u>w/o</u>	0.00							
260									
Packaging	Memo	0.00				<u>1X</u>			<u>16/11/07</u>
Packaging									DAS 36 9-89
270	QC21- Final Inspection - Work Order Release	0.00							
270									
QC	Memo	0.02							
Quality Control									

DAS
21
9-89
NOV 07 2016

DAS
21
9-89
NOV 07 2016

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

Picklist Print

Friday, June 24, 2016 9:50:24 AM

Page 1

Work Order ID: 148090

148090

Parent Item: D5162-041

D5162-041

Parent Item Name: Seat Structure Assembly

Start Date: 7/15/2016

Required Date: 7/22/2016

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP REV:A 14.11.05 NEW ISSUE DD VERF:JLM IPP
REV:B 15-02-06 AS PER DWG REV.A DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D5190-1		Manufactured	No			110	Each	7.0000	1	1			
---------	--	--------------	----	--	--	-----	------	--------	---	---	--	--	--

D5190-1

Armrest Fitting

**

EL 16/0-25

Location

Loc Qty

Loc Code

WA003

7

145951

7

D5190-3		Manufactured	No			110	Each	11.0000	1	1			
---------	--	--------------	----	--	--	-----	------	---------	---	---	--	--	--

D5190-3

Weld Pin

**

EL 16/0-25

Location

Loc Qty

Loc Code

WA002

11

145521

11

M4130NT0.750W.049		Purchased	No			105	f	52.4500	15.5	16.31579			
-------------------	--	-----------	----	--	--	-----	---	---------	------	----------	--	--	--

M4130NT0 750W 049

4130 RD Tube .750 x.049W

**

EL 16/0-25

Location

Loc Qty

Loc Code

MAT033

52.45

135802X 13.8'

m122425

20

m134001

10.45

m134845

22

D4667-041		Manufactured	No			110	Each	8.0000	1	1			
-----------	--	--------------	----	--	--	-----	------	--------	---	---	--	--	--

D4667-041

Armrest Stud Assembly

**

EL 16/0-25

Location

Loc Qty

Loc Code

WA002

8

140230

8

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER :					

Picklist Print

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Page 2

Work Order ID: 148090

148090

Parent Item: D5162-041

D5162-041

Parent Item Name: Seat Structure Assembly

Start Date: 7/15/2016

Required Date: 7/22/2016

Start Qty: 1.00

Required Qty: 1.00

M4130NT0.500W.049

Purchased

No

105

f

275.8650

4.33

4.557895

M4130NT0 500W 049

4130 RD Tube .500 x.049W

EL 1670-25

Location

Loc Qty

Loc Code

MAT032

275.865

m124293

12.166

m127111

8.633

m128713

21

m129826

162

m130551

72.066

** New 'D' part.*

Now D3016-5/7

M4130NT1.000W.120

Purchased

No

105

f

1.2500

1.2

1.263158

M4130NT1 000W 120

4130 RD Tube 1.00 x .120wall

EL 1670-25

Location

Loc Qty

Loc Code

MAT033

1.25

m131146

1.25

** New 'D' part*

D3016-9/11

D3020-1

Manufactured

No

120

Each

6.0000

4

4

D3020-1

Fitting

EL 1670-25

148092x2

147438x2

Location

Loc Qty

Loc Code

WA002

6

141541

6

D3017-7

Manufactured

No

130

Each

17.0000

3

3

D3017-7

Lug

EL 1670-25

Location

Loc Qty

Loc Code

WA002

17

137735

17

3

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Shop Packet Print

Page 2

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

Picklist Print

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Page 3

Work Order ID: 148090

148090

Parent Item: D5162-041

D5162-041

Parent Item Name: Seat Structure Assembly

Start Date: 7/15/2016

Required Date: 7/22/2016

Start Qty: 1.00

Required Qty: 1.00

D3023-1 Manufactured No 130 Each 1.0000 1 1

D3023-1

Back Panel

EL 16/11/1

151268x1

Location

Loc Qty

Loc Code

WA001

1

147219

1

M4130NT0.750W.083

Purchased No

105

f

18.4400

2.5

2.631579

M4130NT0 750W 083

4130 RD Tube .750 x.083W

EL 16/11-2

Location

Loc Qty

Loc Code

MAT032

18.44

135242x

m134001

18.44

D3022-1

Manufactured No

150

Each

3.0000

1

1

D3022-1

Seat Pan

EL 16/10-25

151269x1

Location

Loc Qty

Loc Code

WA001

3

146031

1

146032

2

D3016-15

Manufactured No

165

Each

8.0000

2

2

D3016-15

Gusset

EL 16/10-25

Location

Loc Qty

Loc Code

WA002

8

119895

8

148096x2

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER :					

Picklist Print

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Page 4

Work Order ID: 148090

148090

Parent Item: D5162-041

D5162-041

Parent Item Name: Seat Structure Assembly

Start Date: 7/15/2016

Required Date: 7/22/2016

Start Qty: 1.00

Required Qty: 1.00

D3016-13 Manufactured No

165 Each 14.0000 2 2

D3016-13

Bracket

**

EL 16-10-25

Location

Loc Qty

Loc Code

WA002

14

141430

14

2

D3016-17 Manufactured No

165 Each 30.0000 2 2

D3016-17

Gusset

**

B 16-10-25

Location

Loc Qty

Loc Code

WA002

30

138268

30

2

D3017-11 Manufactured No

165 Each 48.0000 4 4

D3017-11

Cap

**

EL 16-10-25

Location

Loc Qty

Loc Code

WA001

48

142889

48

4

MS20600-AD4W2 Purchased No

200 Each 369.0000 46 46

MS20600-AD4W2

Rivet

**

46 40

16/11/02

DAS
36
9-89

Location

Loc Qty

Loc Code

GA

119

m126475

119

ST308

250

m134762

150

m135058

100

7

135127

33x

DAS
36
9-89

DAS
36
9-89

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MS20600-AD4W3

M129795

6x

16/11/02

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	
OTHER :					

Picklist Print

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Work Order ID: 148090

148090

Parent Item: D5162-041

D5162-041

Parent Item Name: Seat Structure Assembly

Start Date: 7/15/2016

Required Date: 7/22/2016

Start Qty: 1.00

Required Qty: 1.00

AN4-6A Purchased No

240 Each 583.0000 1 1

AN4-6A

BOLT

**

135350

DAS
6
9-89

NOV 04 2016

Location

Loc Qty

Loc Code

over003

400

M134943

200

M135056

200

ST345

183

M130851

37

M134852

146

NAS43DD4-16FC Purchased No

240 Each 20.0000 2 2

NAS43DD4-16FC

Spacer

**

DAS
6
9-89

NOV 04 2016

Location

Loc Qty

Loc Code

ST550

20

m130835

4

m133790

16

AN4-4A Purchased No

240 Each 143.0000 1 1

AN4-4A

BOLT

**

DAS
6
9-89

NOV 04 2016

Location

Loc Qty

Loc Code

FP001

2

m125709

2

ST346

141

m129390

141

D5159-043 Manufactured No

105 Each 1.0000 1 1

D5159-043

Seat Back Brace Assembly

**

12/16/11-1

Location

Loc Qty

Loc Code

ST358

1

143444

1

151270x1

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Shop Packet Print

Page 5

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
							Completed By		
							Lead hand / Supervisor Approval Verification		
							QC / QA Coordinator Approval		
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Picklist Print

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Work Order ID: 148090

148090

Parent Item: D5162-041

D5162-041

Parent Item Name: Seat Structure Assembly

Start Date: 7/15/2016

Required Date: 7/22/2016

Start Qty: 1.00

Required Qty: 1.00

MS27039-4-20

Purchased

No

240

Each

80.0000

4

4

MS27039-4-20

Screw

**

NOV 04 2016

DAS
6
9-89

Location

Loc Qty

Loc Code

ST279

80

m132551

30

m135056

50

MS20600-AD4W4

Purchased

No

240

Each

2,020.000

4

4

MS20600-AD4W4

Rivets

**

NOV 04 2016

DAS
6
9-89

Location

Loc Qty

Loc Code

CCK005

1982

M133990

1482

M134955

500

ST308

38

M132640

38

MS27039-1-19

Purchased

No

240

Each

276.0000

4

4

MS27039-1-19

Screw

**

13574

NOV 04 2016

DAS
6
9-89

Location

Loc Qty

Loc Code

GA

82

m134134

82

ST280

194

m135058

194

D3024-1

Manufactured

No

240

Each

5.0000

3

3

D3024-1

Spacer

**

1454642
1481041

NOV 04 2016

DAS
6
9-89

Location

Loc Qty

Loc Code

ST015

5

136424

5

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Shop Packet Print

Page 6

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date: _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		OTHER : _____			

Picklist Print

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Page 7

Work Order ID: 148090

Parent Item: D5162-041

Parent Item Name: Seat Structure Assembly

148090

D5162-041

Start Date: 7/15/2016

Required Date: 7/22/2016

Start Qty: 1.00

Required Qty: 1.00

MS27039-1-17

Purchased

No

240

Each

191.0000

1

1

MS27039-1-17

Screw (601.1954)

**

Location

Loc Qty

Loc Code

GA

185

120142

36

m127831

149

ST280

6

m127305

6

NOV 04 2016

DAS
6
9-89

MS24693-S49

Purchased

No

240

Each

200.0000

4

4

MS24693-S49

Screw

**

Location

Loc Qty

Loc Code

ST286

200

m130835

200

NOV 04 2016

DAS
36
9-89

M 135046 (4x)

NAS1149D0332J

Purchased

No

240

Each

2,036.000

30

30

NAS1149D0332.J

Washer

**

Location

Loc Qty

Loc Code

CA

6

m129682

6

FP001

14

m134502

14

GA

995

m135046

995

ST260a

564

m134848

564

ST264

457

m134502

22

m134738

435

NOV 04 2016

DAS
6
9-89

135672

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step # : _____		QTY Effective : _____			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____					

Picklist Print

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Work Order ID: 148090

Parent Item: D5162-041

Parent Item Name: Seat Structure Assembly

148090

D5162-041

Start Date: 7/15/2016

Required Date: 7/22/2016

Start Qty: 1.00

Required Qty: 1.00

MS20600-AD4W5

Purchased

No

240

Each

436.0000

8

8

MS20600-AD4W5

Blind Rivet

NOV 04 2016

DAS
6
9-89

Location

Loc Qty

Loc Code

ST308

299

m131340

11

m132769

288

WA004

137

m131618

134

m132640

3

240

Each

1,864.000

17

17

135350

DAS
6
9-89

NOV 04 2016

MS21042L3

Purchased

No

MS21042L3

Nut

Location

Loc Qty

Loc Code

CCK007

600

m135056

600

FP001

32

m133790

32

GA

175

m133790

3

m134360

172

ST303

1057

m134039

12

m134634

2

m134754

243

m134943

800

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
Past Expiry Date ☐	Manufacturing Process ☐				
Misidentified ☐	Past Due ☐	OTHER : _____			

Picklist Print

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Work Order ID: 148090

148090

Parent Item: D5162-041

D5162-041

Parent Item Name: Seat Structure Assembly

Start Date: 7/15/2016

Required Date: 7/22/2016

Start Qty: 1.00

Required Qty: 1.00

NAS1149D0432J

Purchased

No

240

Each

850.0000

17

17

NAS1149D0432.J

WASHER

NOV 04 2016

DAS
6
9-89

Location

Loc Qty

Loc Code

GA

26

m131026

26

ST264

824

m134676

824

D5159-041

Manufactured

No

105

Each

1.0000

1

1

D5159-041

Seat Back Brace Assembly

CL 16-10-2

151271X1

Location

Loc Qty

Loc Code

ST358

1

146090

1

AN4-14A

Purchased

No

240

Each

385.0000

2

2

AN4-14A

Bolt

NOV 04 2016

DAS
6
9-89

Location

Loc Qty

Loc Code

FG

5

122141

5

over003

250

M134754

100

M134943

150

ST344

130

M134573

30

M135056

100

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
							Completed By		
							Lead hand / Supervisor Approval Verification		
							QC / QA Coordinator Approval		

Root Cause				FAULT CATEGORY			
Environment ☐		No Re-verification ☐		Pressure/Forced ☐		Temperature/Cure ☐	
Design ☐		Operator ☐		Bending ☐		Set-up ☐	
Doc/Data ☐		Offset/Setup ☐		Centre Not Concentric ☐		BOM/Route ☐	
Equip/Tooling ☐		Supplier ☐		Cracks ☐		Broken/Damage/Defect ☐	
Handling/Pre ☐		Training ☐		Crimp/Kink/Ripple/Wave ☐		Inspection Incomplete/Unqualified ☐	
Material ☐		Use for Testing ☐		Cuffs ☐		Contamination ☐	
Internal Transport ☐		Poor Information ☐		Crushing ☐		Countersink ☐	
Tribal Knowledge ☐		Rushing ☐		Heat Treat ☐		Cut Too Short ☐	
LOA ☐		Product Improvement ☐		Wave/Twist in Tube ☐		Instructions Incomplete/Unclear ☐	
Substation ☐		Process Improvement ☐		Marks/Chatter ☐		Drill Holes ☐	
Past Expiry Date ☐		Manufacturing Process ☐		OTHER : _____ _____ _____			
Misidentified ☐		Past Due ☐					

Picklist Print

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Work Order ID: 148090

148090

Parent Item: D5162-041

D5162-041

Parent Item Name: Seat Structure Assembly

Start Date: 7/15/2016

Required Date: 7/22/2016

Start Qty: 1.00

Required Qty: 1.00

D3031-1 Manufactured No

240 Each 12.0000 2 2

D3031-1

Loop

Location

Loc Qty

Loc Code

GA	12	
134318	2	
145241	10	

NOV 04 2016

DAS
9-89

DAS
36
9-89

15/288 (2)

AN3-12A Purchased No

240 Each 90.0000 3 3

AN3-12A

Bolt

Location

Loc Qty

Loc Code

ST349	90	
m133064	16	
m134257	74	

135603 NOV 04 2016

DAS
6
9-89

MS21042L4 Purchased No

240 Each 2,157.000 8 8

MS21042L4

Locknut

Location

Loc Qty

Loc Code

GA	161	
m133769	161	
OVER007	500	
m134955	500	
ST303	1402	
m127376	12	
m134861	890	
m135058	500	
ST305	94	
m130922	94	

NOV 04 2016

DAS
6
9-89

D2199-31 Manufactured No

105 Each 0.0000 1 1

D2199-31

Strut Details

148110x1

2 16-11-2

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Shop Packet Print

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DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step # : _____		QTY Effective : _____			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____					

Picklist Print

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Work Order ID: 148090

148090

Parent Item: D5162-041

D5162-041

Parent Item Name: Seat Structure Assembly

Start Date: 7/15/2016

Required Date: 7/22/2016

Start Qty: 1.00

Required Qty: 1.00

MS27039-1-20

Purchased

No

240

Each

122.0000

2

2

MS27039-1-20

Screw

DAS
6
9-89

NOV 04 2016

Location

Loc Qty

Loc Code

ST280

122

124326

122

MS27039-4-21

Purchased

No

240

Each

27.0000

2

2

MS27039-4-21

Screw

DAS
6
9-89

NOV 04 2016

Location

Loc Qty

Loc Code

ST279

27

m132803

27

MS27039-1-18

Purchased

No

240

Each

1,800.000

3

3

MS27039-1-18

Screw

DAS
6
9-89

NOV 04 2016

Location

Loc Qty

Loc Code

GA

251

123522

55

124326

196

over006

1373

124326

1373

ST280

176

124326

176

D5159-045

Manufactured

No

105

Each

3.0000

1

1

D5159-045

Seat Rib Assembly

EL 16-11-2

Location

Loc Qty

Loc Code

ST358

3

138038

1

148065

2

151273X1

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Shop Packet Print

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DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
				Completed By _____					
				Lead hand / Supervisor Approval Verification					
				QC / QA Coordinator Approval					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Picklist Print

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Work Order ID: 148090

148090

Parent Item: D5162-041

D5162-041

Parent Item Name: Seat Structure Assembly

Start Date: 7/15/2016

Required Date: 7/22/2016

Start Qty: 1.00

Required Qty: 1.00

AN970-4

Purchased

No

240

Each

79.0000

1

1

AN970-4

Washer

**

135390

DAS
6
9-89

NOV 04 2016

Location

Loc Qty

Loc Code

ST260a

50

m133769

50

ST321

29

m133992

29

D3016-1	B 150737 X2	EL 16-10-25
D3016-3	B 150738 X4	EL 16-10-25
D3016-5	B 150739 X2	EL 16-10-25
D3016-7	B 150740 X4	EL 16-10-25
D3016-9	B 150741 X2	EL 16-10-25
D3016-11	B 150742 X2	EL 16-10-25

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐				
Date : _____	Step #: _____	QTY Effective : _____			MRB (QSI042) Approval	
Description Work Order Deviation		Disposition				
					Completed By	
					Lead hand / Supervisor Approval Verification	
					QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐				
OTHER : _____						



DESIGN CP	DRAWN BY CP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D3016	REV. A SHEET 1 OF 3
DATE 01.05.18		TITLE SEAT FRAME ASSEMBLY	SCALE NTS
A	01.05.18	NEW ISSUE	

QTY	PART NUMBER	DESCRIPTION	MATERIAL
X	D3016-041	SEAT FRAME ASSEMBLY	N/A
1	D3016-1	TUBE	AISI 4130N TUBE, Ø0.75 DIA x 0.049 WALL (M4130N-T0750W049)
2	D3016-3	TUBE	AISI 4130N TUBE, Ø0.75 DIA x 0.049 WALL (M4130N-T0750W049)
1	D3016-5	TUBE	AISI 4130N TUBE, Ø0.50 DIA x 0.049 WALL (M4130N-T0500W049)
2	D3016-7	TUBE	AISI 4130N TUBE, Ø0.50 DIA x 0.049 WALL (M4130N-T0500W049)
1	D3016-9	SADDLE	AISI 4130N TUBE, Ø1.00 DIA x 0.120 WALL (M4130N-T1000W120)
1	D3016-11	SADDLE	AISI 4130N TUBE, Ø1.00 DIA x 0.120 WALL (M4130N-T1000W120)
1	D3016-13	BRACKET	AISI 4130N SHEET, 18 GAUGE (M4130N-S049)
1	D3016-15	GUSSET	AISI 4130N SHEET, 18 GAUGE (M4130N-S049)
1	D3016-17	GUSSET	AISI 4130N SHEET, 18 GAUGE (M4130N-S049)
2	D3020-1	FITTING	N/A

NOTES

- 1) WELD PER DART QSI 004
- 2) ON SHEET METAL PARTS, BREAK ALL UNMARKED CORNERS 0.020-0.040
- 3) FINISH: POWDER COAT GREY SANDTEX (REF. 4.3.5.6) PER DART QSI 005 4.3
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

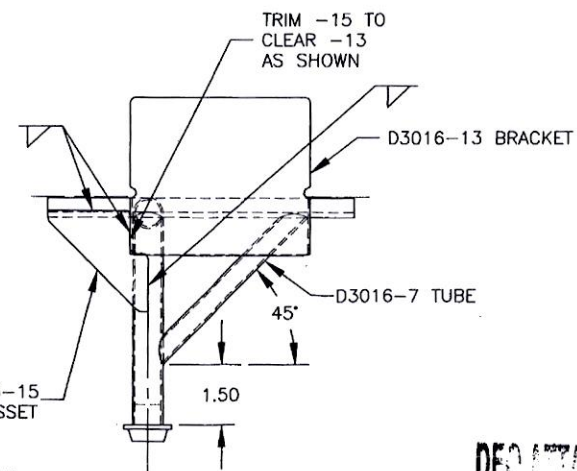
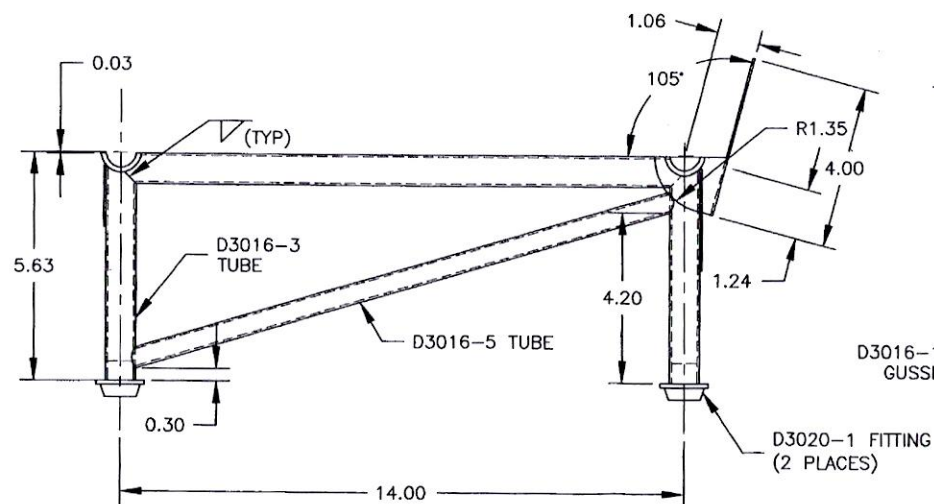
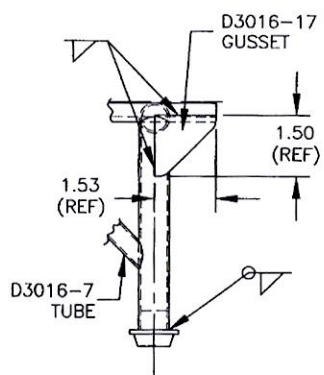
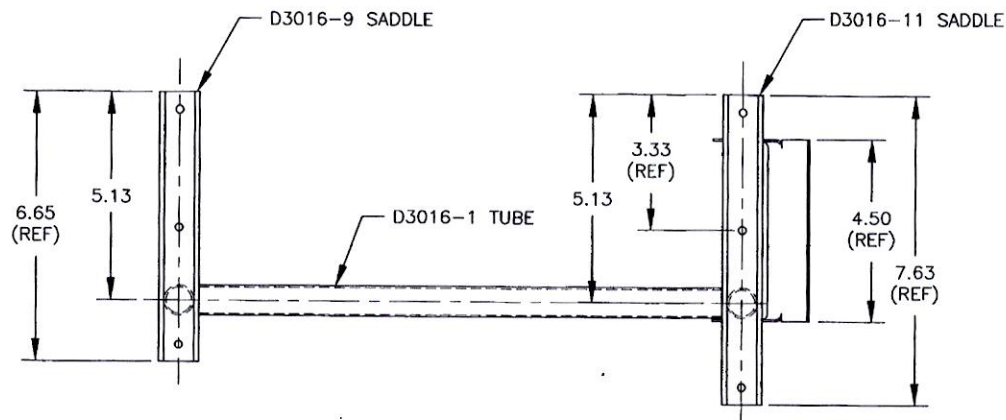
DEO ATTACHED

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01.05.30

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D3016-041 SEAT FRAME ASSEMBLY



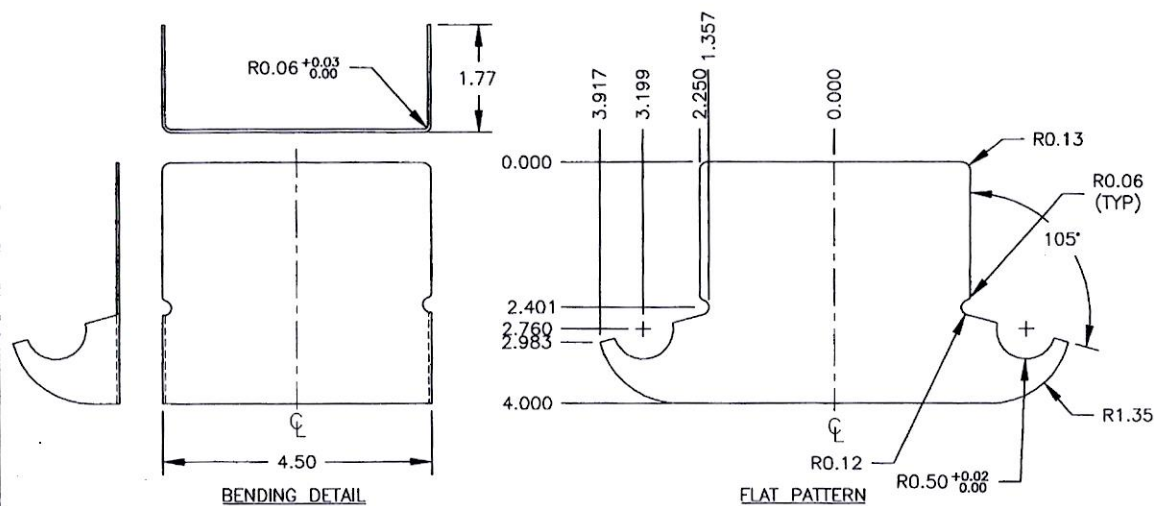
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RELEASED
01.05.30

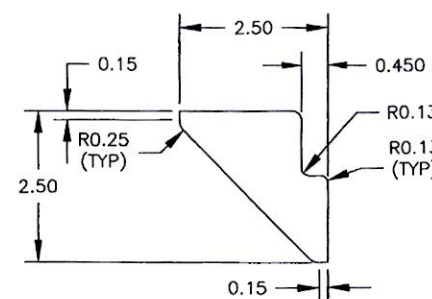
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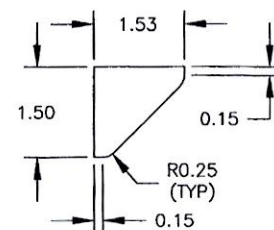
DESIGN UP	DRAWN BY UP	DART	DART AEROSPACE LTD. HAMPSHIRE, ONTARIO, CANADA
CHECKED #	APPROVED #	DRAWING NO. D3016	REV. A SHEET 2 OF 3
DATE 01.05.18		TITLE SEAT FRAME ASSEMBLY	SCALE 1:3



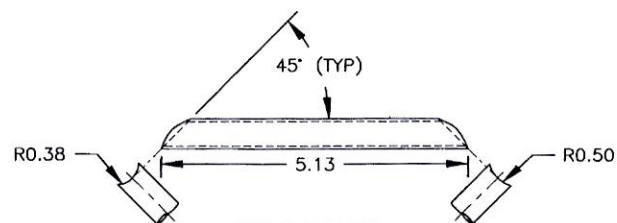
D3016-13 BRACKET



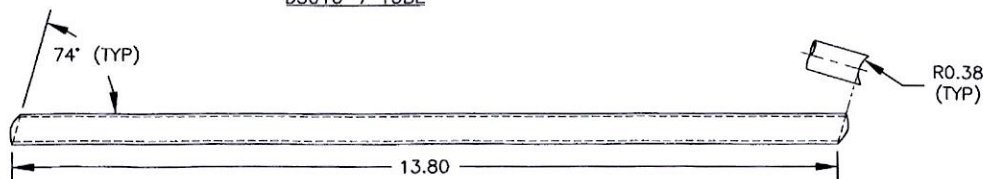
D3016-15 GUSSET



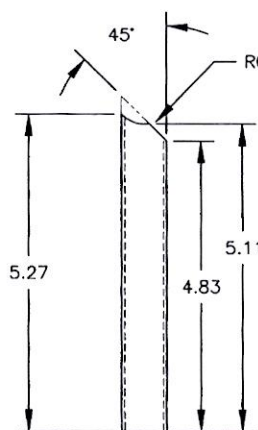
D3016-17 GUSSET



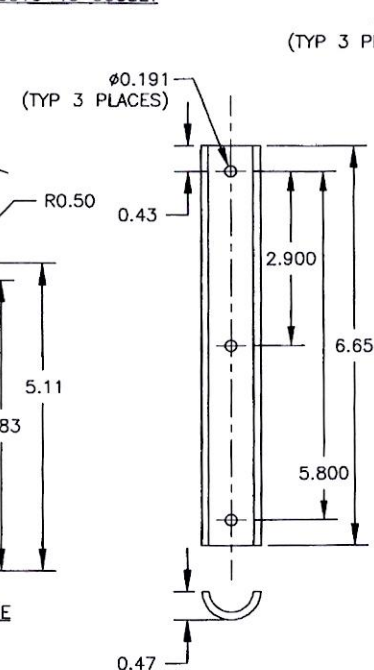
D3016-7 TUBE



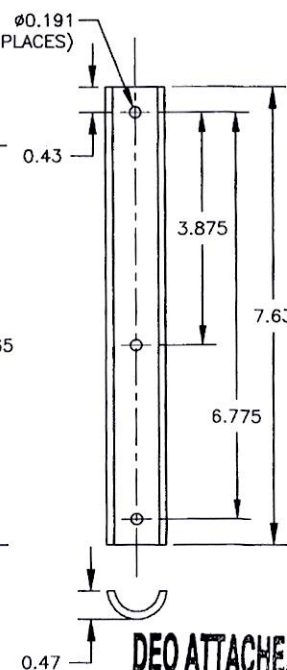
D3016-5 TUBE



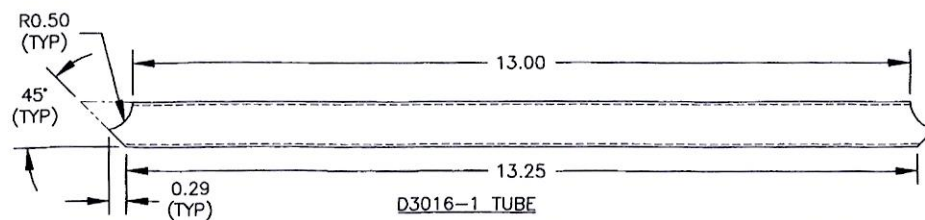
D3016-3 TUBE



D3016-9 SADDLE



D3016-11 SADDLE



D3016-1 TUBE

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DESIGN	UP	DRAWN BY	UP	DART	DART AEROSPACE LTD. HARRISBURG, ONTARIO, CANADA
CHECKED	*	APPROVED	*	DRAWING NO.	D3016
DATE	01.05.18	TITLE	SEAT FRAME ASSEMBLY	REV. A	SHEET 3 OF 3
				SCALE	1:2

DEO ATTACHED
RELEASED
9.05.30

DRAWING NO. D3016	TITLE SEAT FRAME ASSEMBLY	REV. A	DART AEROSPACE LTD ENGINEERING ORDER	D.E.O. NO. D3016-A-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN	CHECKED	MFG. APPR.	APPROVED	DE APPR.		
DATE 10.01.29	DATE 10.01.29	DATE 10.01.29	DATE 10.01.29	DATE 10.01.29	DATE 10.01.29	

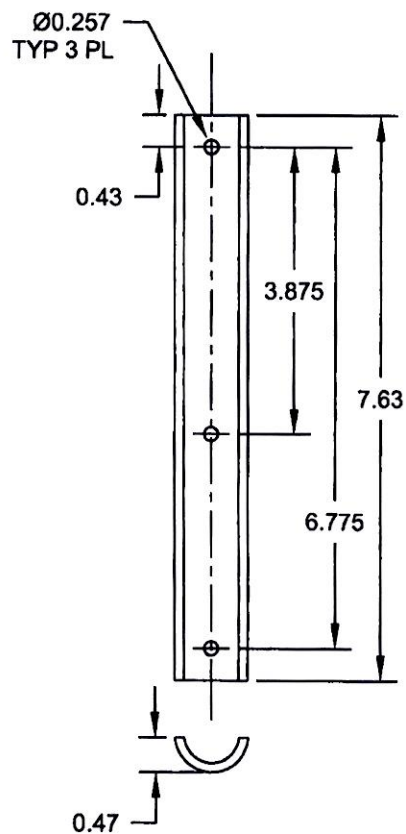
PURPOSE:

TO REVISE D3016-11 SADDLE'S HOLE SIZES

CHANGE:

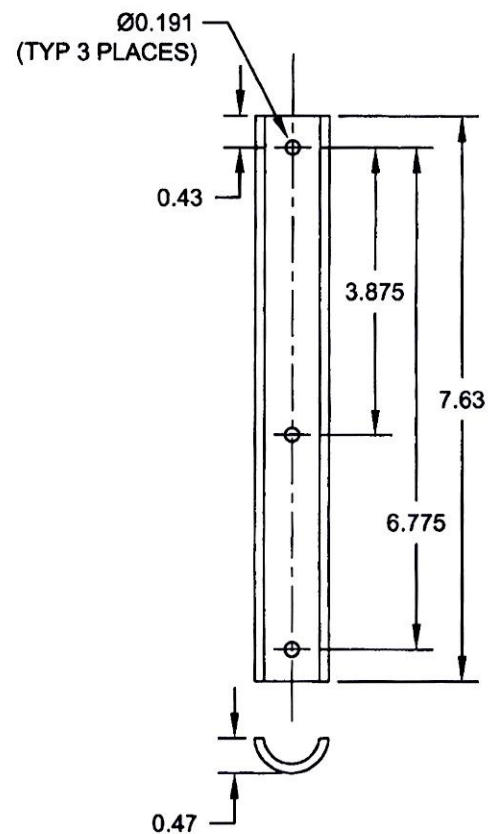
DETAIL D3016-11 SADDLE (SHEET 3): Ø0.257 TYP 3 PL WAS Ø0.191 (TYP 3 PLACES) AS SHOWN:

IS:

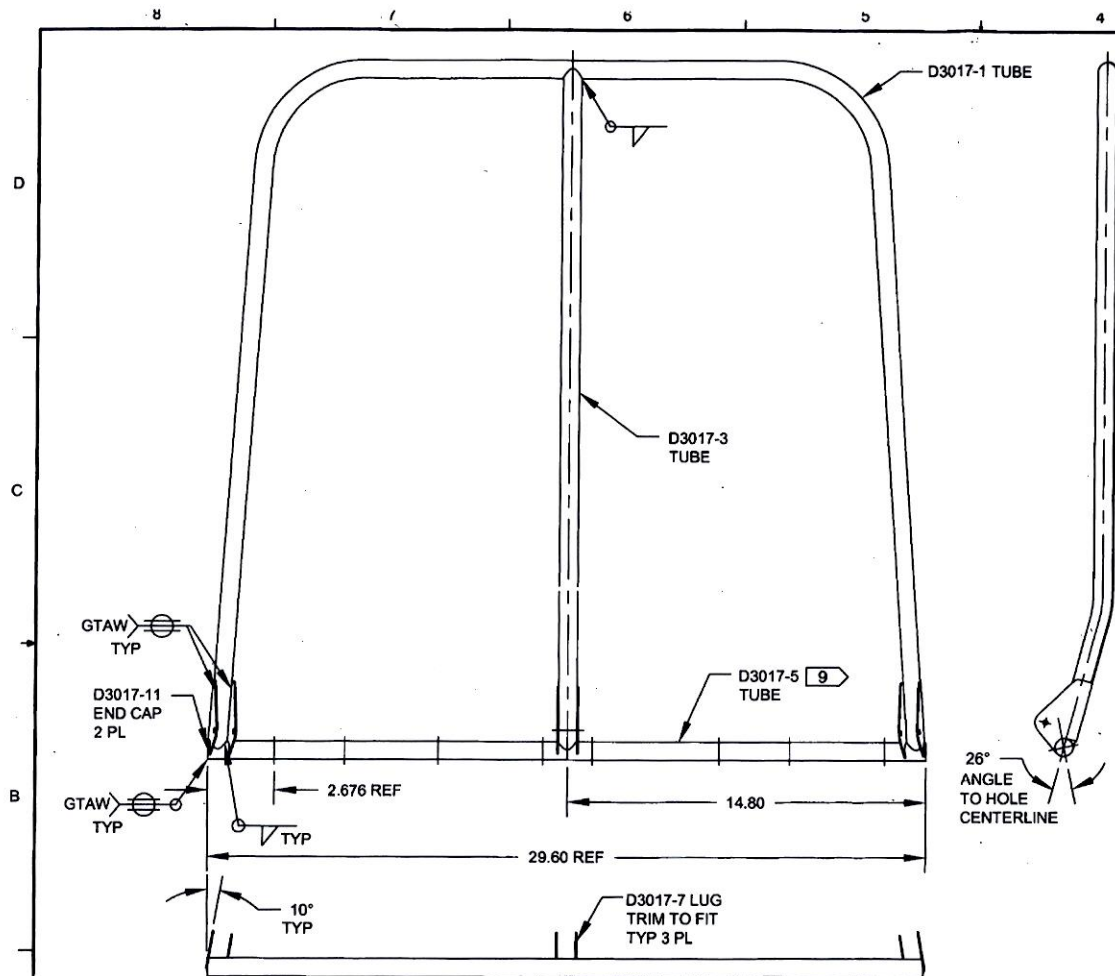


D3016-11 SADDLE

WAS:



D3016-11 SADDLE



ITEM No.	QTY	PART NUMBER	DESCRIPTION
	X	D3017-041	BACK FRAME ASSEMBLY
1	1.	D3017-1	TUBE
2	1	D3017-3	TUBE
3	1	D3017-5	TUBE
4	3	D3017-7	LUG
5	2	D3017-11	END CAP

D3017-041 BACK FRAME ASSEMBLY

NOTES:

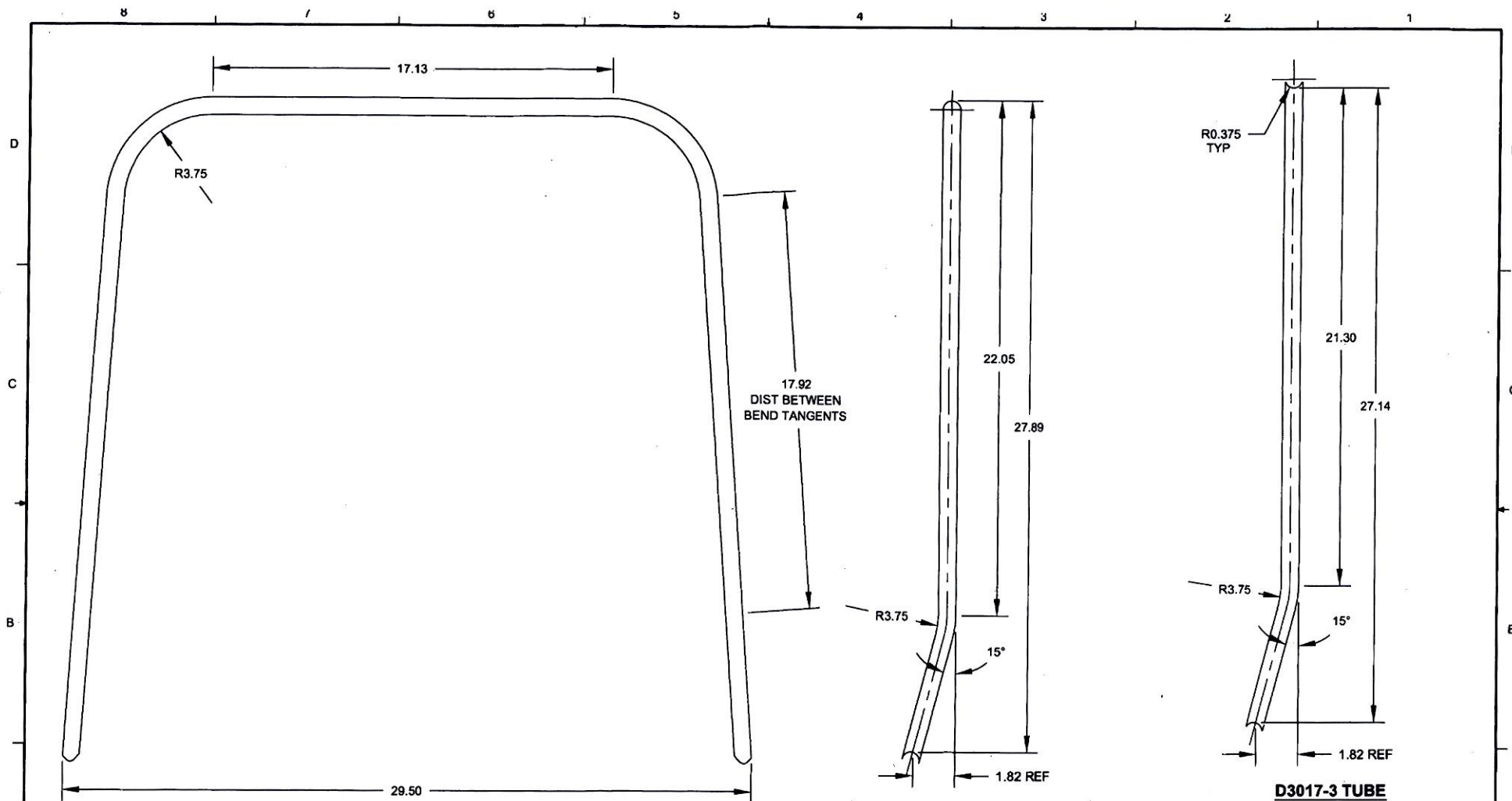
- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3017-041" USING FINE POINT PERMANENT INK-MARKER
- 7) WEIGHT: 4.50 lbs
- 8) WELD PER DART QSI 004
- 9) ROTATE SO THAT PILOT HOLES ARE ANGLED AS SHOWN IN END VIEW.

RELEASED

2015 FEB 04

ECN 15-522 9P

C	FINISH REMOVED (TO BE APPLIED AT NEXT ASSY)	AJS	14.11.13
B	REFORMAT DWG, -5 TUBE WALL THKNS REVD (A8-3) SHEET 3 & 4 ADDED TO CLARIFY DRAWING. RADIUS CHANGED FROM R4.00 TO R3.75 (B4-2, B2-2). HOLE SIZE CHANGED FROM Ø0.191 TO Ø0.257 (C6-3, C3-3)	JPH	10.01.13
A	NEW ISSUE	CP	01.05.18
REV.	DESCRIPTION	BY	DATE
DESIGN	CP		
DRAWN	AJS		
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	14.11.13		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. D3017		REV. C	
TITLE BACK FRAME ASSEMBLY		SCALE	
		NTS	
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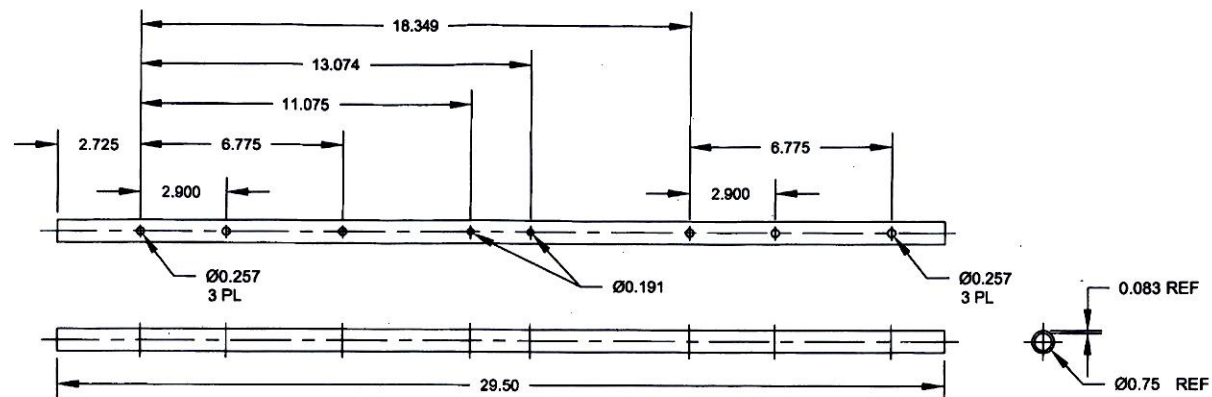


NOTES:

- 1) MATERIAL: AISI 4130N TUBE, Ø0.75 DIA x 0.049 WALL (M4130N-T0750W049)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D3017-1: 2.38 lbs; D3017-3: 0.84 lbs.

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2015 FEB 04

DESIGN	CP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED		DRAWING NO.	REV. C
MFG. APPR.		D3017	SHEET 2 OF 4
APPROVED		TITLE	SCALE
DE APPR.		BACK FRAME ASSEMBLY	NTS
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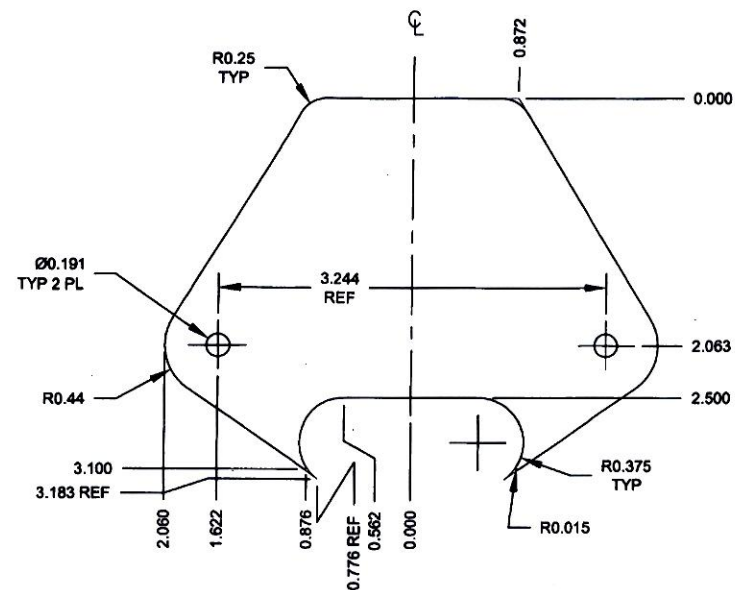


D3017-5 TUBE

NOTES:

- 1) MATERIAL: AISI 4130N TUBE, $\varnothing 0.75$ DIA x 0.083 WALL (M4130N-T0750W083)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.89 lbs

DESIGN	CP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED		DRAWING NO.	REV. C
MFG. APPR.		D3017	SHEET 3 OF 4
APPROVED		TITLE	SCALE
DE APPR.		BACK FRAME ASSEMBLY	NTS
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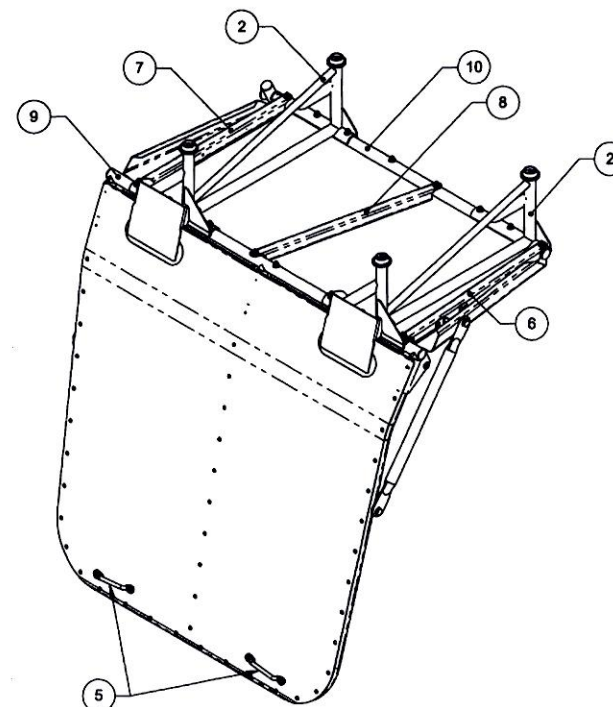
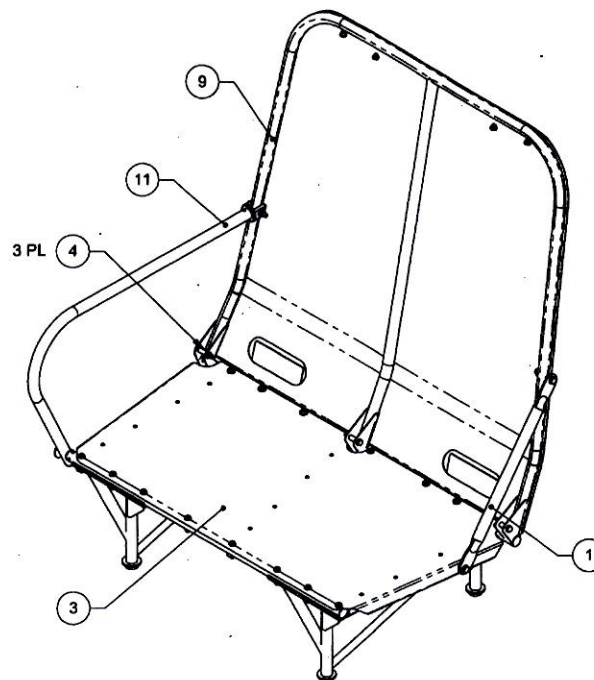


D3017-7F FLAT PATTERN
PART IS SYMMETRIC
ABOUT CENTERLINE

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2015 FEB 04

DESIGN	CP	DART AEROSPACE LTD	
DRAWN	ALS	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. C
MFG. APPR.	<i>[Signature]</i>	D3017	SHEET 4 OF 4
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.		BACK FRAME ASSEMBLY	NTS
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ITEM	QTY -041	P/N	DESCRIPTION
	X	D5162-041	SEAT STRUCTURE ASSEMBLY
1	1	D2199-31	STRUT
2	2	D3016-041	SEAT FRAME ASSEMBLY
3	1	D3022-1	SEAT PAN
4	3	D3024-1	SPACER
5	2	D3031-1	LOOP
6	1	D5159-041	SEAT BACK BRACE ASSY
7	1	D5159-043	SEAT BACK BRACE ASSY
8	1	D5159-045	SEAT RIB ASSY
9	1	D5162-051	SEATBACK ASSEMBLY
10	1	D5189-041	TUBE ASSEMBLY
11	1	D5189-043	ARMREST ASSEMBLY
12	3	AN3-12A	BOLT
13	1	AN4-6A	BOLT
14	1	AN4-4A	BOLT
15	2	AN4-14A	BOLT
16	1	AN970-4	WASHER
17	4	MS20600AD4W4	RIVET, BLIND
18	8	MS20600AD4W5	RIVET, BLIND
19	17	MS21042L3	NUT, SELF-LOCKING
20	8	MS21042L4	NUT, SELF-LOCKING
21	4	MS24693-S49	SCREW, CSK 100°
22	1	MS27039-1-17	SCREW, PAN-HEAD
23	3	MS27039-1-18	SCREW, PAN-HEAD
24	4	MS27039-1-19	SCREW, PAN-HEAD
25	2	MS27039-1-20	SCREW, PAN-HEAD
26	2	MS27039-4-21	SCREW, PAN-HEAD
27	4	MS27039-4-20	SCREW, PAN-HEAD
28	17	NAS1149D0432J	WASHER
29	30	NAS1149D0332J	WASHER
30	2	NAS43DD4-16FC	SPACER



D5162-041 SEAT STRUCTURE ASSEMBLY

GENERAL NOTES:

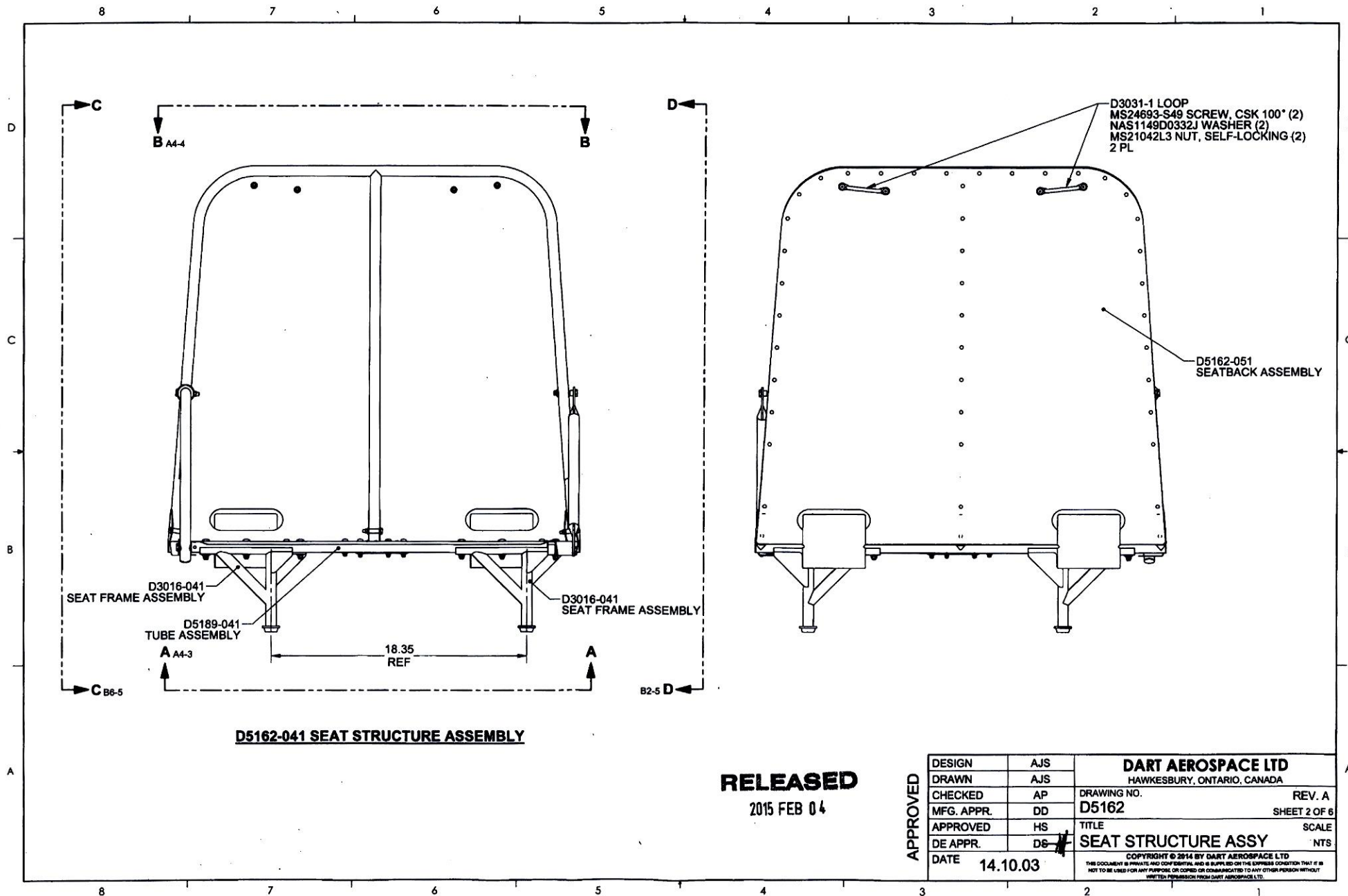
- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 19.1 lbs

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2015 FEB 04
ECN 0-322 9

APPROVED

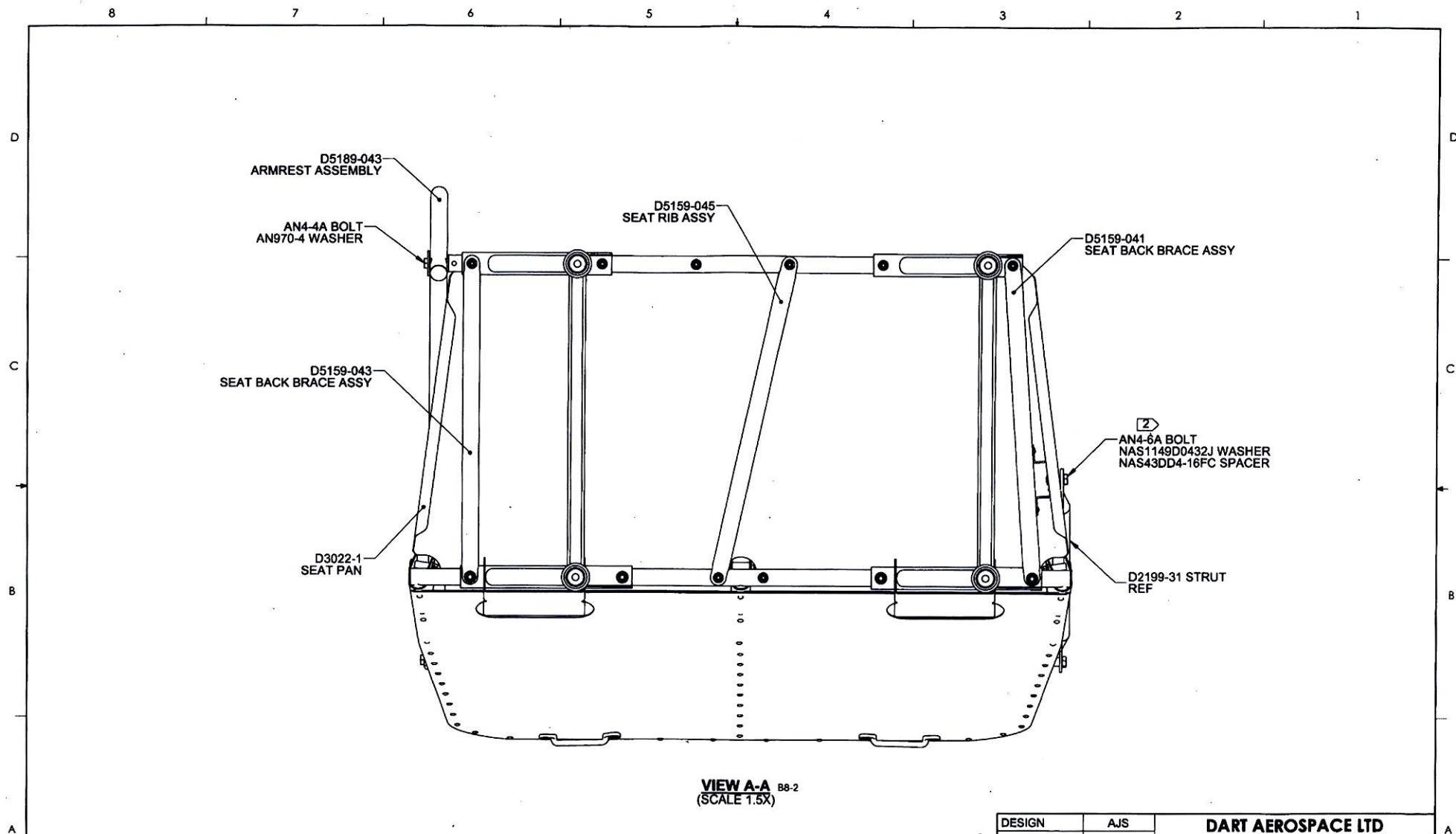
A		NEW ISSUE		AJS	14.10.03
REV.	DESCRIPTION			BY	DATE
DESIGN	AJS	DART AEROSPACE LTD			
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA			
CHECKED	AP	DRAWING NO.	D5162	REV. A	
MFG. APPR.	DD			SHEET 1 OF 6	
APPROVED	HS	TITLE		SCALE	
DE APPR.	DS	SEAT STRUCTURE ASSY		NTS	
DATE	14.10.03			COPYRIGHT © 2014 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



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DESIGN	AJS	DART AEROSPACE LTD	
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AP	DRAWING NO.	REV. A
MFG. APPR.	DD	D5162	SHEET 2 OF 6
APPROVED	HS	TITLE	SCALE
DE APPR.	D6	SEAT STRUCTURE ASSY	NTS
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VIEW A-A B8-2
(SCALE 1.5X)

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2015 FEB 04

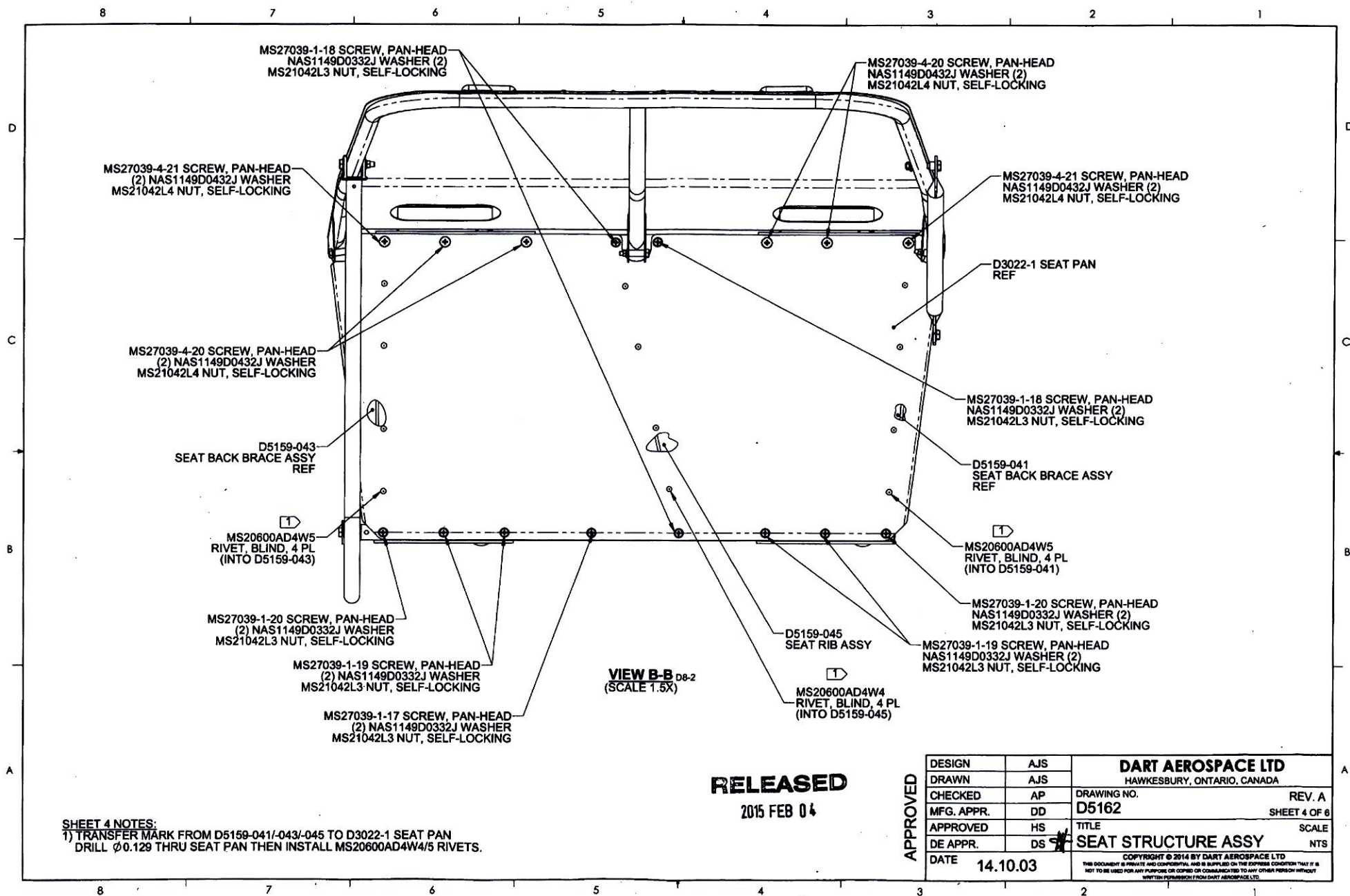
SHEET 3 NOTES:

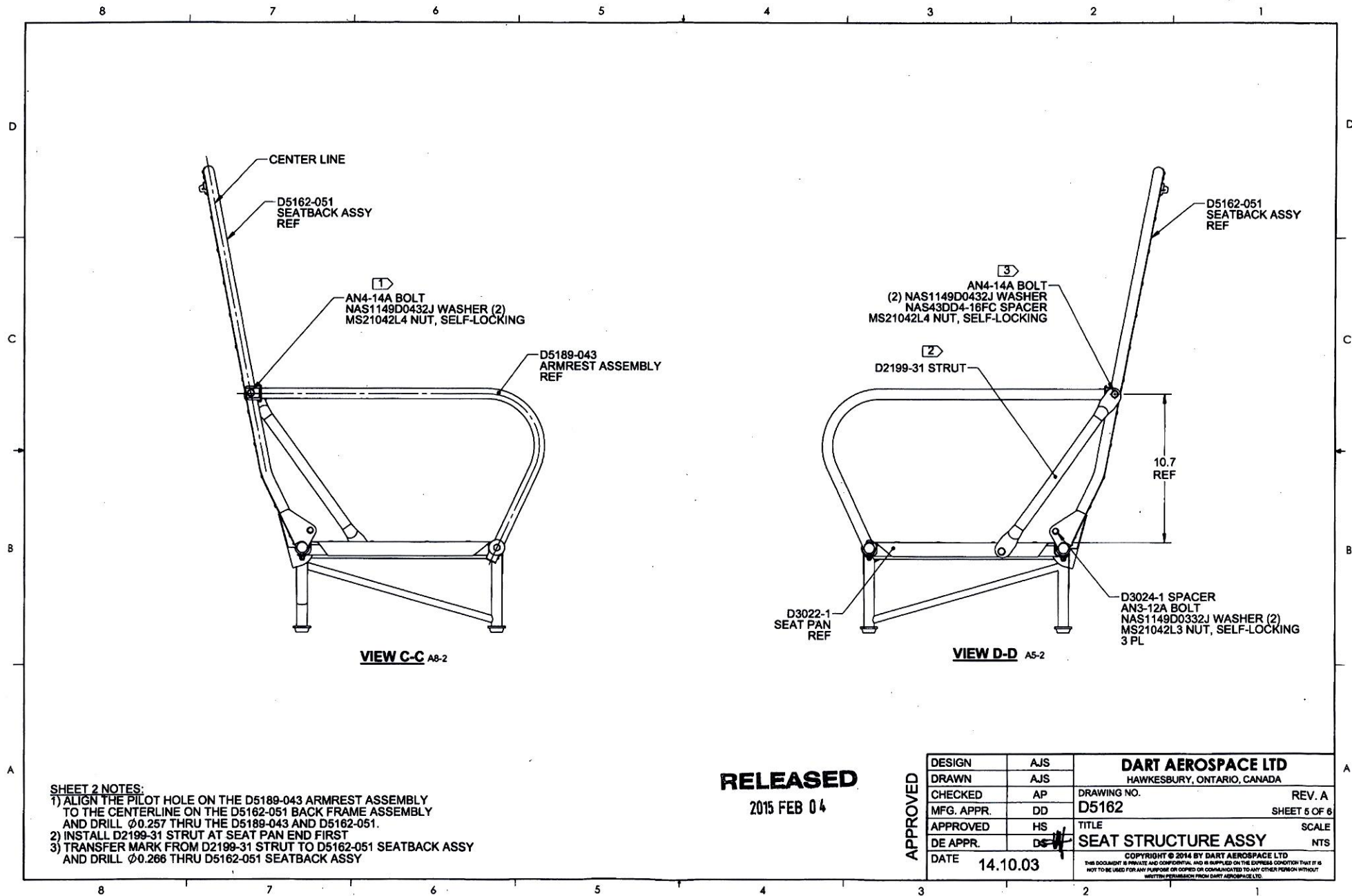
- 1) INSTALL D2199-31 STRUT AT SEAT PAN END FIRST
- 2) TRANSFER MARK FROM D5159-041 SEAT BACK BRACE ASSY TO D3022-1 SEAT PAN AND DRILL $\phi 0.386$ THRU D3022-1 SEAT PAN.

APPROVED

DESIGN	AJS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED	AP	DRAWING NO. D5162	REV. A
MFG. APPR.	DD	TITLE SEAT STRUCTURE ASSY	SHEET 3 OF 6
APPROVED	HS		
DE APPR.	DS	SCALE NTS	
DATE	14.10.03		

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2015 FEB 04

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DESIGN	AJS	DART AEROSPACE LTD	
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AP	DRAWING NO.	REV. A
MFG. APPR.	DD	D5162	SHEET 5 OF 6
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	SEAT STRUCTURE ASSY	NTS
DATE	14.10.03	COPYRIGHT © 2014 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

ITEM	QTY -051	P/N	DESCRIPTION
	X	D5162-051	SEATBACK ASSEMBLY
1	1	D3017-041	BACK FRAME ASSEMBLY
2	1	D3023-1	BACK PANEL
3	46	MS20600AD4W2	RIVET, BLIND

D3017-041
BACK FRAME ASSEMBLY

MS20600AD4W2
RIVET, BLIND
46 PL

D3023-1
BACK PANEL

8 D5162-051 SEATBACK ASSEMBLY

NOTES:

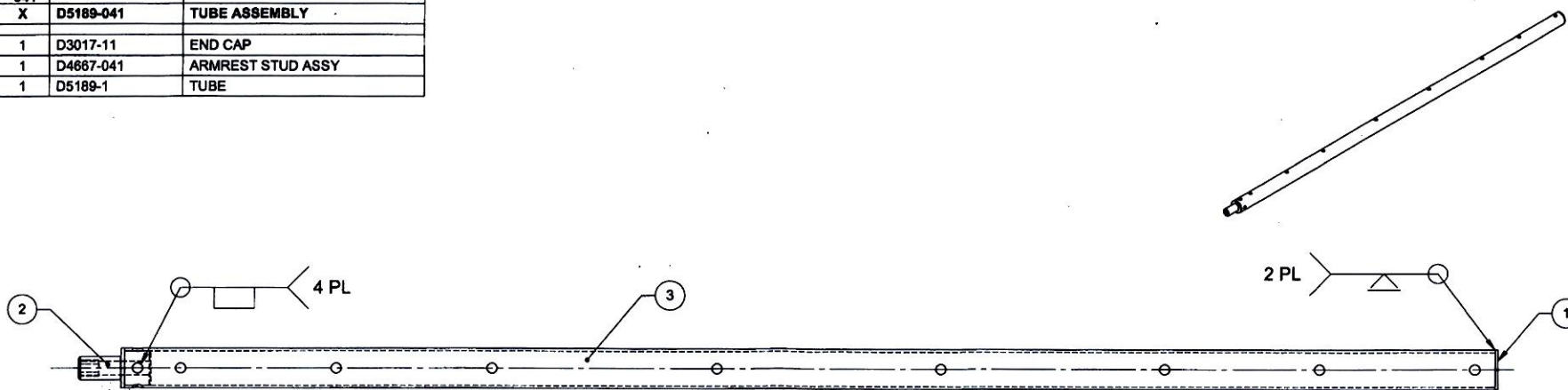
- 1) MATERIAL: N/A
- 2) FINISH: POWDER COAT GREY SANDEX (4.3.5.6) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 7.42 lbs
- 8) TRANSFER MARK FROM D3023-1 TO D3017-041.
DRILL $\varnothing 0.129$ INTO THE D3017-041 (DRILL THRU ONE WALL ONLY).
THEN INSTALL MS20600AD4W2 RIVETS.

RELEASED
2015 FEB 04

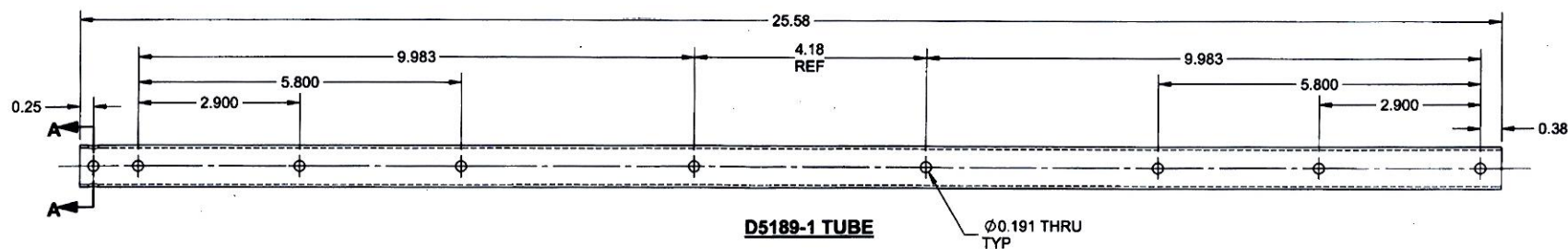
APPROVED

DESIGN	AJS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED	AP	DRAWING NO.	REV. A
MFG. APPR.	DD	D5162	SHEET 6 OF 6
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	SEAT STRUCTURE ASSY	NTS
DATE	14.10.03	COPYRIGHT © 2014 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

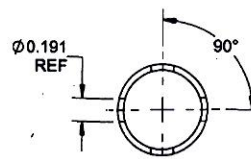
ITEM	QTY	P/N	DESCRIPTION
	X	D5189-041	TUBE ASSEMBLY
1	1	D3017-11	END CAP
2	1	D4667-041	ARMREST STUD ASSY
3	1	D5189-1	TUBE



D5189-041 TUBE ASSEMBLY



D5189-1 TUBE



SECTION A-A
SCALE 2X

NOTES:

- 1) MATERIAL -041: N/A
-1: AISI 4130N SEAMLESS STEEL TUBING, $\phi 0.750 \times 0.049$ WALL
PER MIL-T-6736 OR AMS 6371/6360/6361/6362/6373/6374
REF M4130NT0.750W0.049
- 2) FINISH -041: POWDER COAT GREY SANDEX (4.3.5.6) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.85 lbs
- 8) WELD PER DART QSI 004

RELEASED

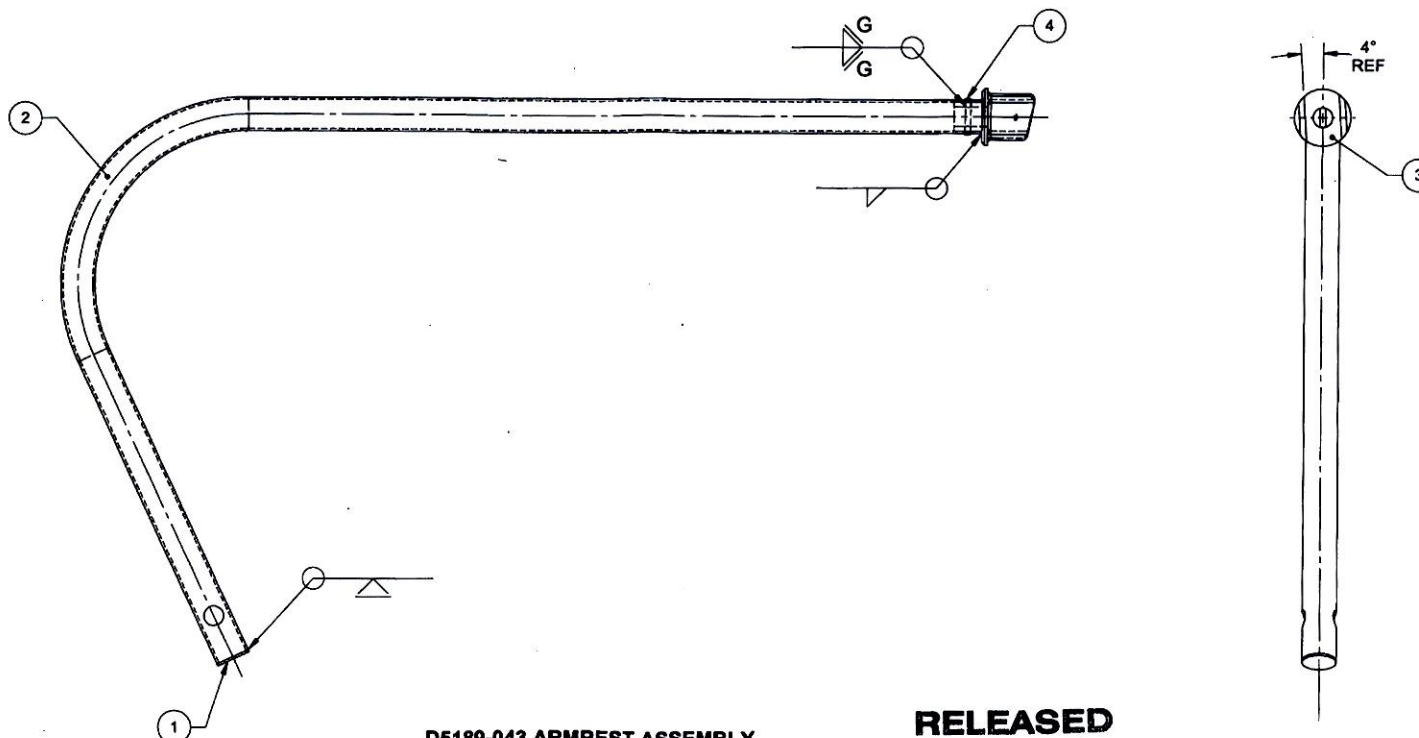
2015 FEB 04

ECN 15-522 4P

A NEW ISSUE		AJS	14.11.18
REV.	DESCRIPTION	BY	DATE
DESIGN	AJS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED	AP	DRAWING NO.	REV. A
MFG. APPR.	DD	D5189	SHEET 1 OF 3
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	ARMREST COMPONENTS	NTS
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APPROVED

ITEM	QTY	P/N	DESCRIPTION
	X	D5189-043	ARMREST ASSEMBLY
1	1	D3017-11	END CAP
2	1	D5189-3	ARMREST
3	1	D5190-1	ARMREST FITTING
4	1	D5190-3	WELD PIN



D5189-043 ARMREST ASSEMBLY

RELEASED

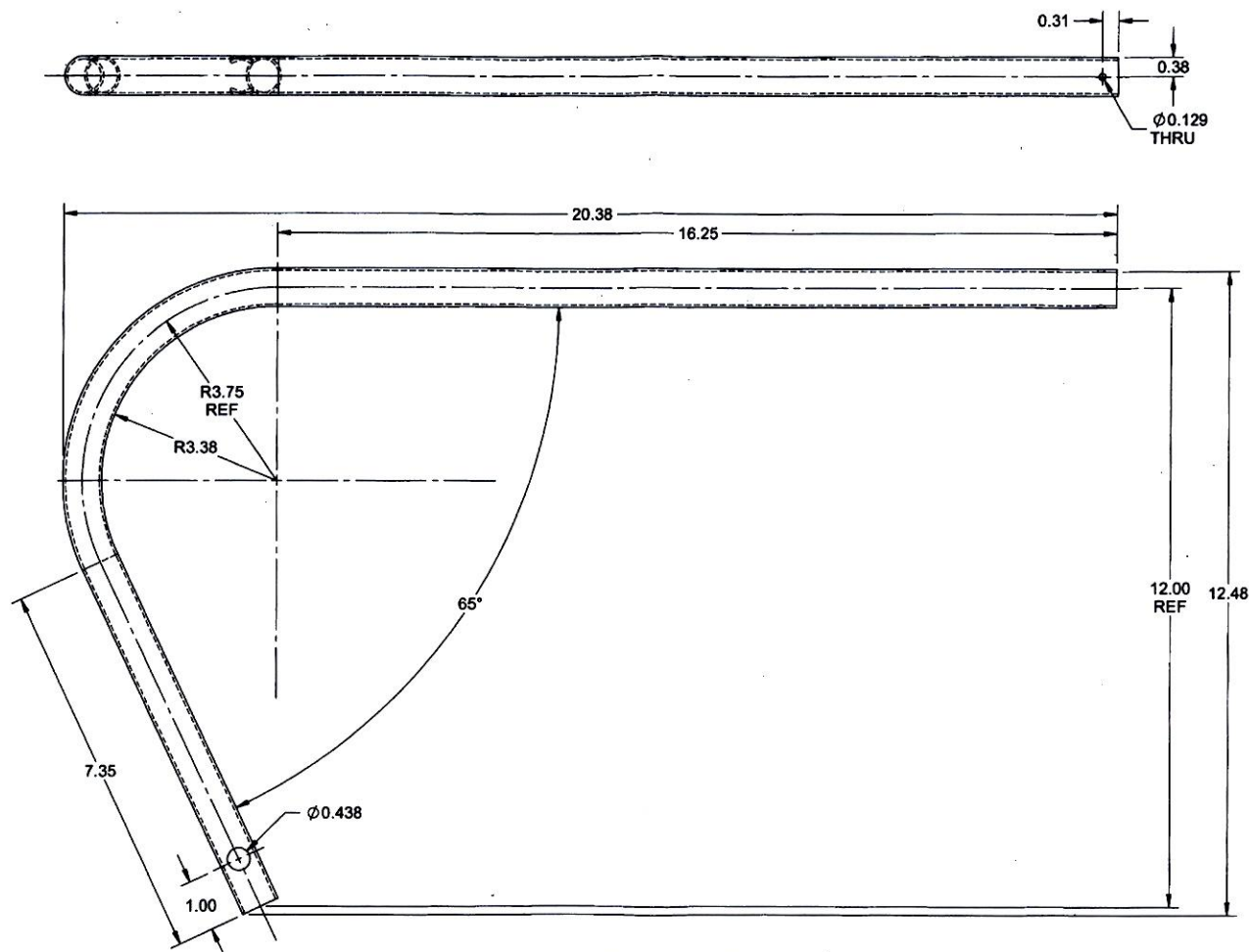
2015 FEB 04

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: POWDER COAT GREY SANDETEX (4.3.5.6) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 1.08 lbs
- 8) WELD PER DART QSI 004

APPROVED

DESIGN	AJS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED	AP	DRAWING NO.	REV. A
MFG. APPR.	DD	D5189	SHEET 2 OF 3
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	ARMREST COMPONENTS	NTS
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RELEASED

2015 FEB 04

D5189-3 ARMREST

NOTES:

- 1) MATERIAL: AISI 4130N SEAMLESS STEEL TUBING, $\varnothing 0.750 \times 0.049$ WALL
PER MIL-T-6736 OR AMS 6371/6360/6361/6362/6373/6374
REF M4130NT0.750W0.049
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.95 lbs

APPROVED

DESIGN	AJS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED	AP	DRAWING NO.	REV. A
MFG. APPR.	DD	D5189	SHEET 3 OF 3
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	ARMREST COMPONENTS	NTS
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